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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/942,561

08/31/2001

Wolfram Lutke

7607

7590

06/25/2004

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EXAMINER

CYGAN, MICHAEL T

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 06/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/942,561

Applicant(s)

LUTKE ET AL.

Examiner

Michael Cygan

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 31 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 2, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Richardson (US 5,734,346). Richardson discloses the claimed invention, a sample level sensor comprising a microwave generator for producing microwaves at frequencies up to 1000GHz (column 3 lines 59-61), transmit and return antennas (A1 and A2) directed towards the sample, and a reception and evaluation circuit which determines the sample level based upon the delay time between transmit and return pulses (column 7 lines 14-56 and Figures 1,2). As shown in Figure 1, the generator is arranged directly on the antenna. Based upon a frequency of 1000GHz (which equals a wavelength of  $3 \times 10^{-4}$  m) and an antenna aperture no larger than the antenna diameter (0.07 m, see column 6 lines 1-6), the product would equal 21 mm<sup>2</sup>, much less than the claimed value of 500 mm<sup>2</sup>.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richardson (US 5,734,346) in view of Wien (US 6,202,485 B1).

Richardson teaches the claimed invention except for a passive, hollow waveguide. Wien teaches the use of a passive, hollow waveguide [7] connecting an antenna to a microwave generator in a level sensor apparatus; see Figures 1 and 2 and column 4 line 57 through column 6 line 19. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a passive, hollow waveguide as taught by Wien in the invention taught by Richardson to form the generator/antenna connection, since Wien teaches that such a waveguide filters out unwanted frequencies and improves the directional characteristic of the antenna; see column 3 lines 1-29.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Richardson (US 5,734,346) in view of Edvardsson (US 4,044,355).

Richardson teaches the claimed invention except for a bulk product having a mean particle size on the order of magnitude with or greater than the

wavelength of incident microwave radiation. Edvarsson teaches the use of grain (inherently having a size on the order of magnitude of a centimeter) as an alternative sample to that of liquid for microwave reflection level determination; see abstract and column 1 lines 28-40. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use grain as taught by Edvarsson in the invention taught by Richardson as the measured product, since Edvarsson teaches that such use is "advantageous"; see column 1 lines 33-40. Since the wavelength at 1000 GHz is approximately 0.3 cm, the wavelength would be in the order of magnitude and/or less than the particle size.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is (571) 272-2175. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2855

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Michael Cygan', with a stylized flourish at the end.

Michael Cygan  
Primary Examiner  
Art Unit 2855